

REMARKS

New claims 18-35 are added. Independent claim 18 and claims dependent therefrom introduce first, second and third devices to separate the device types from their structure and functionality. There is no 1:1 mapping between Open, Closed and Primitive devices versus the claimed first, second and third devices. The second device (or devices) having the middleware is an Open Device (e.g., the O:PDA in Fig. 3, the O:Computer in Fig. 8, the plural devices O:PC, O:PDA and O:Laptop in Fig. 6 and both O:PDA and O:Computer in Fig. 9) but the first and third devices (stream producers and consumers, respectively) can be either Closed Devices or Primitive Devices. In the case where the middleware is placed in an external network, or distributed between a device in the external network and a fourth device in the Personal Area Network (PAN), the PAN need not have any Open Device. The new claims cover the four basic embodiments, as well as other features described in the original application. The new claims are believed to be fully supported.

Rejections under 35 U.S.C. § 112, second paragraph

Independent claim 3 was rejected as being indefinite. In particular it was stated that "said open devices" on line 15 of claim 3 had insufficient antecedent basis. In response applicants amend claim 3 to recite "Open Devices" to provide the proper antecedent basis.

Similarly, applicants amend all of the claims to improve clarity and consistency of usage of claim terminology. For example, references to "Private Area Network" are corrected to be consistent with the widespread usage of "Personal Area Network" throughout the original application. A new claim 17 is added.

Rejections under 35 U.S.C. § 103

Claims 1-16 were rejected as being obvious over U.S. Patent 7,039,033 to Haller et al. in view of U.S. Patent 6,909,721 to Ekberg et al. Applicants respectfully disagree for the reasons explained below. The new claims presented herein are also believed to be patentable over the cited patents.

The References Do Not Teach Redirection of Output Streams

The patent to Haller was alleged in the Office action to teach the claimed "redirection" feature, wherein the middleware functions "to redirect an output stream from one device to an input port on another device". However, Haller merely discloses the routing of IP packets. In column 7, lines 51-58, the routing component 550 "realizes a fully meshed IP network with access to a WAN" and "enables exchange of IP packets between two terminals, broadcasting of IP packets between all terminals on a PAN and routing of IP packets to and from a WAN". (Here, PAN stands for a personal area network, and WAN for a wide area network.) Further along, in column 8, lines 17-21, a "NAT component 553 translates a private IP address to and from a real IP address".

Haller is a router. Routers use headers and forwarding tables to determine the best path for forwarding packets over the IP network. A router does not change the final destination of the forwarded output streams. There is clearly no redirection of packets to change the destination of the stream to a different terminal. In the case of the NAT, Haller fails to mention any address translations for packets sent between terminals within the PAN. All of the translations by the NAT are for externally transmitted packets. Haller applies the NAT for solving the global IP address shortage, providing a single IP address for all

devices in the PAN (terminals 107) to communicate via a single gateway device 106 over an external IP network, e.g. with server 101. Accordingly, neither Haller's router component 550 nor his NAT component 553 performs the redirection of an output stream from another PAN device, as set forth in applicants' claims, for enabling configuration of communication paths between the various devices internally within the PAN. Additionally, Haller does not mention enabling a user to configure a routing table in the router nor to configure an address translation or port forwarding table in the NAT. Thus, neither Haller's router nor his NAT performs any redirection of an output stream based on any user profile, as recited in applicants' claims 1, 3, 8 and 9.

The Ekberg patent teaches a device detection and service discovery system for mobile communication networks. Ekberg's application discovery server and middleware enable terminal applications to find each other. However, there is no disclosure in Ekberg of redirection of streams between the applications, and therefore there is an underlying assumption that these applications are compatible with each other. Neither is there any disclosure of redirection of streams within the PAN at the device level. Likewise, as in Heller, no packet header or payload modification is disclosed for data transfers between terminals 120 within the disclosed piconet 100, nor any output redirection based on user profiles. The middleware software 220 of the server 110 merely locates each application residing in the devices within a directory to quickly find their counterparts (col. 5, lines 1-35; col. 7, line 62 - col. 8, line 32). There is no redirection based on any entry in the application directory of the server's middleware. Ekberg is silent regarding routing, directing or redirecting of streams between devices within the PAN on either the device level or application level.

The Examiner does not rely on Ekberg for teaching redirection of an output stream on either the device level or application level. Rather, the Examiner cites Ekberg for storing a profile including information on redirection. In any case, as is shown below in the section on storing redirection information, Ekberg does not teach redirection. Consequently, the Examiner's proposed combination of Haller and Ekberg does not teach or suggest either the "output redirection" or the "application redirection" limitations of Applicants' currently amended independent claims 1, 3, 8, and 9.

The References do not Teach Storing Redirection Information

Applicants' currently amended independent claims 1, 3, 8 and 9 recite, *inter alia*, "a Personal Area Network middleware . . . arranged to . . . store and maintain a user profile including user **information** on at least . . . **redirection**" (emphasis added). Redirection as shown above is defined in Applicants' Detailed Description at paragraph [0064] as "intercept[ing] the output stream addressed to a device at an output port, perform[ing] the necessary transformation and send[ing] it to another device on the PAN."

In paragraph 3, on page 6 regarding claim 1, on page 10 regarding claim 3, and on page 14 regarding claims 8 and 9, the Examiner stated that "Ekberg discloses . . . redirection information (see fig. 2A-2B, 4A-B, col. 8, lines 23-32)."

Applicants respectfully traverse. Figs. 2A and 2B of Ekberg merely show the hardware on devices in the piconet, both terminal and server, some of which is used for communication. Further in contrast, Figs. 4A and 4B of Ekberg merely show storage of application directories in memory on devices in the piconet, terminal and server. Further in

contrast, col. 8, lines 23-32 of Ekberg, merely discuss the storage of application directories in memory on devices in the piconet as depicted in Figs. 4A and 4B. Ekberg is silent regarding routing, directing, or redirecting and does not teach Applicants' independent claim 1, 3, 8, and 9 recitation of "redirection." Ekberg does not teach redirection.

Therefore Ekberg neither teaches nor suggests the "storing redirection information" limitation of Applicants' currently amended independent claims 1, 3, 8, and 9.

The References do not Teach Which Devices Should be Visible on an External Network

Applicants' currently amended claims 1 and 3 recite, *inter alia*, "which Open Devices, Closed Devices, or Primitive Devices should be **visible on an external network**" (emphasis added). Applicants' currently amended claims 8 and 9 recite, *inter alia*, "which Open Devices, Closed Devices or Primitive Devices should be visible on an external network."

In paragraph 3, regarding independent claim 1 on pages 4 and 5, regarding independent claim 3 on page 8, and regarding independent claims 8 and 9 on pages 12 and 13, the Examiner admits that "Haller does not . . . disclose . . . which Open, Closed or primitive Devices should be **visible on said external network**" (emphasis added).

However in paragraph 3, on pages 5 and 6 regarding independent claim 1, on pages 9 and 10 regarding independent claim 3, and on pages 13 and 14 regarding independent claims 8 and 9, the Examiner alleges that "Ekberg discloses . . . which Open, Closed or Primitive Devices should be visible on an external network (adding terminals from the piconet 100 that

the server is likely to communicate with into the application directory, see fig 2A-2B, 4A-B, col. 8, lines 23-32)"

Applicants respectfully traverse. Ekberg teaches "device detection . . . in a mobile ad hoc communications network." (See Ekberg, Abstract). Further, in contrast, Ekberg teaches that "[a]n ad hoc network is a short-range wireless system comprising an arbitrary collection of wireless devices that are physically close enough to exchange information." (See Ekberg, col. 1, lines 41-43.) Further, in contrast, Ekberg teaches a piconet. (See Ekberg, Fig. 1). A piconet, as defined by <http://www.yourdictionary.com/piconet> is "a very small wireless network [where] Bluetooth devices can establish ad hoc piconets with a maximum radius of 100 meters at maximum power level, although they are generally much smaller."

The teachings of Ekberg cited by the Examiner do not establish an "external network." Figs. 2A and 2B of Ekberg merely teach hardware or devices in the piconet, both terminal and server, some of which is used for communication (RF Adapters 204 and 254). Further, Figs. 4A and 4B of Ekberg just teach storage of application directories in memory on devices in the piconet, terminal and server. Further, col. 8 lines 23-32 of Ekberg only teach the storage of application directories in memory on devices in the piconet as depicted in Figs. 4A and 4B.

Ekberg teaches detection of devices on a piconet and is silent regarding Applicants' claim 1, 3, 8, and 9 recitation of "which . . . devices should be **visible on an external network**" (emphasis added). Therefore, Ekberg in combination with Haller once again fails to teach or suggest all the "visible on an external network" limitation of

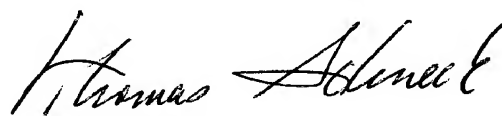
Applicants' currently amended independent claims 1, 3, 8, and 9.

Accordingly, Applicants respectfully request that the Examiner withdraw the obviousness rejection of claims 1, 3, 8, and 9 under 35 U.S.C. §103(a). Moreover, since claims 2 and 11-15 depend from claim 1, claims 4-7 and 16 depend from claim 3, and claim 10 depends from claim 9, they too are allowable for at least the same reasons. Since new claim 17 depends from independent claim 9 it too is allowable for at least the same reasons.

The new claims 18-35 also recite the storing of redirection information and the redirection of output streams, which has not been taught by the cited prior art. The new claims too are asserted to be patentable for substantially the same reasons as in claims 1-17.

Applicants request reconsideration of the claims in light of the amendments and remarks made herein. A notice of allowance is earnestly solicited.

Respectfully submitted,



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